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BCS

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/727,242 11/30/00 CHAO

H P/3483-13

002352 WM31/0907
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EXAMINER

JOHNSON, T ART UNIT	PAPER NUMBER
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2623
DATE MAILED:

5

09/07/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/227,242

Applicant(s)

Chao et al.

Examiner

T. Johnson

Group Art Unit

2623

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on the pre-amendment filed 11/30/00
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 22-32 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 22-32 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) _____
- ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413.
- ☒ Notice of References Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

Office Action Summary

Part III Detailed Action

Disclosure

1. USPTO (United States Patent and Trademark Office) policy does not permit the USPTO to hyperlink to any commercial site, since the USPTO exercises no control over the organization, views, or accuracy of the information contained on these outside sites. Hyperlinks and/or other forms of browser-executable code embedded in the text of the patent application are impermissible, and should be deleted. Specifically, Applicant should delete the hyperlinks and/or browser-executable code on page 45, lines 12-15, and page B-11, lines 15-16. Correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C 112:

The specification shall contain a written disclosure of the invention, and the manner and process of making an using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 28 is rejected under 35 U.S.C. 112, first paragraph, because the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention.

For claim 28, the specification does not teach "filtering the data file prior to the wavelet transform step".

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a

person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negated by the manner in which the invention was made.

5. Claims 22-27 and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chui et al., 5,604,824.

For claim 22, a method of compressing a data file by performing a wavelet transform of the data file to provide a series of wavelet coefficients, quantizing those wavelet coefficients which fall above a predetermined threshold value to provide a quantized series of wavelet coefficients; and compressing the quantized series of wavelet coefficients to provide a compressed data file is provided by Chui et al. in at least the abstract, at least section iii starting on line 58 in c. 34 to c. 35, line 55, Figs. 1-4, 5a-5b, 7-9, 11a-14, 16-17, penultimate full paragraph in c. 6 – c. 8, line 53, the paragraph bridging cols. 1-2, c. 17, lines 28-65, the last full paragraph in c. 17, and the first full paragraph in c. 36. Chui et al. at least obviously, if not inherently, or equivalently provide for a "file" for compressing. It would've been obvious to one having ordinary skill in the art at the time the invention was made to understand that Chui et al. provide for a "file" for compressing, since a file is data used by a computer, and the compression of Chui et al. is a computer as shown in at least the figures. Also, they (Chui et al.) provide for compressing documents, which can be considered "files", and provide for storage media that carry "files", such as "floppys" or CDROMs where cited above. The term "files" is explicitly referred to with respect to the compressed data in the Background of Chui et al. in at least the paragraph bridging cols. 1-2. Chui et al. also provide for different formats, which are considered in the form of files where cited above.

For claim 23, entropy coding to the quantized series of wavelet coefficients is provided by Chui et al. in at least the abstract, at least section iii starting on line 58 in c. 34 to c. 35, line 55, Figs. 1-4, 5a-5b, 7-9, 11a-14, 16-17, penultimate full paragraph in c. 6 – c. 8, line 53, the paragraph bridging cols. 1-2, c. 17, lines 28-65, the last full paragraph in c. 17, and the first full paragraph in c. 36.

For claim 24, wherein the entropy coding is selected from the group of arithmetic, Huffman, run length and Huffman combined is provided by Chui et al. in at least the abstract, at least section iii starting on line 58 in c. 34 to c. 35, line 55, Figs. 1-4, 5a-5b, 7-9, 11a-14, 16-17, penultimate full paragraph in c. 6 – c. 8, line 53, the paragraph bridging cols. 1-2, c. 17, lines 28-65, the last full paragraph in c. 17, and the first full paragraph in c. 36.

For claim 25, performing a color transformation of the data file prior to the wavelet transform is provided by Chui et al. in at least the abstract, at least section iii starting on line 58 in c. 34 to c. 35, line 55, Figs. 1-4, 5a-5b, 7-9, 11a-14, 16-17, penultimate full paragraph in c. 6 – c. 8, line 53, the paragraph bridging cols. 1-2, c. 17, lines 28-65, the last full paragraph in c. 17, and the first full paragraph in c. 36.

For claim 26, quantizing comprising subband orientation quantization is not explicitly provided by Chui et al., but may be suggested by Chui et al., since the bands are not treated the same with respect to quantization, thus providing for "subband orientation quantization".

For claim 27, the wavelet transform comprising integer wavelet transformation is provided by Chui et al. in at least the abstract, at least section iii starting on line 58 in c. 34 to c. 35, line 55, Figs. 1-4, 5a-5b, 7-9, 11a-14, 16-17, penultimate full paragraph in c. 6 – c. 8, line 53, the paragraph bridging cols. 1-2, c. 17, lines 28-65, the last full paragraph in c. 17, and the first full paragraph in c. 36.

For claim 31, see the rejection of at least claim 22. In addition, see at least Figs. 17-18 as well, which provide for the a compressed data file as is obvious as noted above for claim 22.

For claim 32, see the rejection of at least claim 22. As for a "program" and "routines", see at least Chui et al. in at least c. 16, lines 34-64, Fig. 2, blocks 48a – 52, and Fig. 4, blocks 60 and 65, c. 17, lines 14-28, Fig. 4, block 62, and Fig. 2, block 50, c. 17, lines 51-65 ("programmed") and Fig. 4, block 64, the program code in c. 16, lines 51-52, Fig. 1, blocks 22

and 24, Fig. 2, block 54, and as noted in c. 7, lines 27-32, and in the first five lines of c. 16, where the compressed image is appropriately formatted for disk or archival storage, which is tantamount to a compressed image file.

6. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chui et al., 5,604,824, as applied to claims 22-27 and 31-32 above, and further in view of Ohkuma et al., 5,845,041.

For claim 26, quantizing comprising subband orientation quantization is not explicitly provided by Chui et al., but is suggested by Chui et al., since the bands are not treated the same with respect to quantization, thus providing for "subband orientation quantization". For further evidence of the conventionality of "subband orientation quantization" as claimed, Ohkuma et al. provide for typical "subband orientation quantization" in both the Background in the second full paragraph in c. 4 and c. 11, lines 30-65 and Fig. 1. It would've been obvious to one having ordinary skill in the art at the time the invention was made to quantize with "subband orientation quantization" as taught by Ohkuma et al. with the subband quantization of Chui et al., since this type of quantization is optimal for each band.

For claim 27, the wavelet transform comprising integer wavelet transformation is provided by Chui et al. in at least the abstract, at least section iii starting on line 58 in c. 34 to c. 35, line 55, Figs. 1-4, 5a-5b, 7-9, 11a-14, 16-17, penultimate full paragraph in c. 6 – c. 8, line 53, the paragraph bridging cols. 1-2, c. 17, lines 28-65, the last full paragraph in c. 17, and the first full paragraph in c. 36.

7. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chui et al., 5,604,824, as applied to claims 22-27 and 31-32 above, and further in view of Ouyang et al., 5,835,145.

For claim 28, filtering the data file prior to wavelet transformation is not explicitly provided, but may be considered provided by Chui et al. as noted above depending on the Applicant's meaning of filter. In any case, for the conventionality of "filtering", Ouyang et al.

provide for this in at least the first full paragraph in c. 2. It would've been obvious to one having ordinary skill in the art at the time the invention was made, given the disclosure of Ouyang et al., that Chui et al. do provide for "filtering" before wavelet transformation, and further that it is obvious to filter, such as noise reduction filtering, before compression, which includes wavelet transformation as taught by Ouyang et al. with the compression of Chui et al., since the broad term "filtering" provides for enhancements and other various desirable functions such as reducing the noise prior to compression, such as the wavelet compression of Chui et al.

8. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chui et al., 5,604,824, and Ohkuma et al., 5,845,041, as applied to claims 26-27 above, and further in view of Ito, 5,901,249.

For claim 29, wherein the integer wavelet transformation comprises biorthogonal filter method is not explicitly provided by Chui et al., but is conventional and well known and is provided by Ito in at least the last full paragraph in c. 12. It would've been obvious to one having ordinary skill in the art at the time the invention was made for the wavelet transformation of Chui et al. to use the biorthogonal filter method, since it is well known and conventional and because Ito provide for perfect reconstruction.

9. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chui et al., 5,604,824, and Ohkuma et al., 5,845,041, as applied to claims 26-27 above, and further in view of Said et al., "An Image Multiresolution Representation for Lossless and Lossy Compression".

For claim 30, wherein the integer wavelet transformation comprises the correction method is not explicitly provided by Chui et al. Said et al. teach that it is well known to use the correction method for integer wavelet transforms starting in the paragraph bridging pages 1303 – 1304 and primarily in section II on page 1304, where the S+P transform used by Said et al. is a correction method (that Said et al. provide for a "correction method" is further indicated by the Applicant's specification on page 38, lines 13-15). It would've been obvious to one having ordinary skill in the art at the time the invention was made to use a correction method, as taught by Said et al., with one of the transforms of Chui et al. in Fig. 2, blocks 48a, 48b, or 48c, since

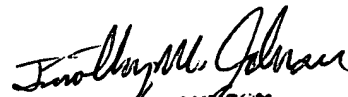
"the S+P transform yields more compression than single-resolution linear predictive coding methods of similar complexity, and can be calculated with a very small computational effort", because Said et al. "propose entropy-coding methods that exploit the multiresolution structure and that can efficiently compress the S+P transformed image for progressive-resolution transmission", because Said et al. "propose an embedded coding method, and show that its rate distortion function is comparable to those of the most efficient lossy compression methods" for "progressive-fidelity transmission", and that the "compression rates obtained with both types of progressive transmission are among the best in the literature", so that "with the proper image transformation, fast inspection schemes can be readily combined with lossless compression, resulting in a negligible penalty in both compression efficiency and coding complexity", as taught by Said in the paragraph bridging pages 1303-1304.

Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy M. Johnson whose telephone number is (703) 306-3096.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone numbers are (703) 305-4700 or (703) 305-4750.

The Group Art Unit FAX number is 703-872-9314.


TIMOTHY M. JOHNSON
PATENT EXAMINER

TS
Timothy M. Johnson
Patent Examiner
Art Unit 2623
September 04, 2001